

REMARKS

Information Disclosure Statement

The Examiner stated that EP 0837331 has not been considered, as it is not in the English language and a statement of relevance has not been included in the specification. Accordingly, a Supplemental Information Disclosure Statement is submitted herewith including a Statement of Relevance for EP 0837331.

Drawings

The Examiner pointed out that formal drawings are required in this application because none have been provided with the application. Accordingly, four sheets of drawings, including Figures 1-6, are submitted herewith. No new matter has been introduced in the required drawings.

Status of Claims

Claims 1 and 4-15 are currently pending in this application. Claims 1 and 4-14 are amended by this response. Claims 2 and 3 are cancelled, and the limitations of claims 2 and 3 have been incorporated into amended claim 1. Claims 5 and 13 have been amended into independent form and incorporate the limitations of original claims 1-3. New claim 15 has been added. Claims 1 and 4-14 stand objected to by the Examiner. Claims 9-12 stand rejected under 35 U.S.C. §112, second paragraph. Claims 1, 4, 7, and 13-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al. and Smethers et al. Claims 5-6 and 8-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al., Smethers et al., and Honzawa et al.

Claim Objections

The Examiner objected to claims 1 and 4-14 because of the following informalities: the numbering of the claims is improper. Accordingly, Claims 1 and 1-14 have been amended to be numbered as "1." etc., instead of "1/" etc.

The Examiner objected to claim 12 under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 12 has been amended into a method claim, rather than an apparatus claim. Claim 12 has also been amended to depend from claim 14, rather than from claim 11.

The Examiner objected to claim 14 for reciting "a reaction vessel" in line 2 of the claim. Accordingly, claim 14 has been amended to recite "the reaction vessel."

Claim Rejections – 35 U.S.C. §112

Claim 3, the limitations of which have been incorporated into amended claim 1, and claims 9-12 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner stated that the term "substantially" in claim 3 is a relative term which renders the claim indefinite. The Examiner stated that the term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The Examiner also stated that it is unclear how planar the zone is that applicant is claiming. Applicants disagree.

The specification of the current application does provide a standard for ascertaining the requisite degree. Specifically, the specification states on page 7, lines 18-22, that "each opening 37 of a vessel 28 is surrounded by a substantially plane rim 39 against which an opaque shoe 41 can be pressed (Figures 4 to 6), so as to prevent external light from penetrating into a photometric measuring device 43." With the knowledge that the rim must be substantially plane so that external light is prevented from penetrating into a photometric measuring device when an opaque shoe is pressed against the rim, one of ordinary skill in the art would be apprised of the scope of the invention. Having met the requirements of 35 U.S.C. §112, removal of the outstanding §112 rejection is respectfully requested.

The Examiner rejected claim 9 as being indefinite for reciting a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim), since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Accordingly, claim 9 has been amended to recite "a shutter for optically isolating a photoelectric detection, and means for measuring the electrical values delivered by the photoelectric detector while it is immersed in the dark, the shutter being closed." Moreover, new claim 15 has been added to depend from claim 9 and to recite "wherein the photoelectric detector is a photomultiplier." Having met the requirements of 35 U.S.C. §112, removal of the outstanding §112 rejection is respectfully requested.

The Examiner rejected claim 10 because there is insufficient antecedent basis for the limitations “the moving equipment” and “the shutter” in line 2 of the claim. Accordingly, claim 10 has been amended to recite “moving equipment.” Also, claim 10 has been amended to depend from claim 9, rather than claim 7, providing sufficient antecedent basis for the limitation “the shutter.” Having met the requirements of 35 U.S.C. §112, removal of the outstanding §112 rejection is respectfully requested.

The Examiner rejected claim 11 because there is insufficient antecedent basis for the limitations “the dark chamber,” “the photometric means,” and “the light-tightness testing source.” Accordingly, claim 11 has been amended to recite “a dark chamber,” “a photometric means,” and “the light source.” The Examiner also stated that it is unclear what the limitation “illuminating, on command, the outside of the dark chamber” means. The Examiner asked what light source is available to illuminate the outside of the chamber. The specification of the current application recites on page 10, lines 31-35, that “the apparatus of the present invention has a light source 57, e.g. a light-emitting diode (LED), for verifying the optical isolation of the measurement cavity as formed by the vessel being measured in association with the photometric means 22.” The specification also recites on page 12, lines 29-33, that “the light source 57 is switched on, after which a new measurement is performed to verify the light-tightness of the temporary dark chamber formed by the photometric assembly 22 and the vessel 28 under measurement.” Having met the requirements of 35 U.S.C. §112, removal of the outstanding §112 rejection is respectfully requested.

Claim Rejections – 35 U.S.C. §103

The Examiner advised Applicants of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. §103(c) and potential 35 U.S.C. §102(e), (f), or (g) prior art under 35 U.S.C. §103(a). The Examiner stated that the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. The Examiner’s presumption is correct. The subject matter of the various claims was commonly owned at the time the invention was made.

Independent Claim 1

Amended claim 1 specifies “A reaction vessel for automatic apparatus for immunological assay, the vessel comprising walls in the form of a vessel for receiving a

sample to be tested, a test reagent, and a substrate coupled with a chemiluminescent substance, and also a filling opening, wherein the walls are proof against any light emitted by the chemiluminescent substance, apart from a window for reading the intensity of any light emitted by the reaction mixture formed by the sample to be tested, the reagent, and the substrate, and wherein the window corresponds to the filling opening of the vessel and wherein the window is surrounded by a substantially plane zone against which a light-proof shoe is pressed.”

Claim 1 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al. and Smethers et al. In addition, the limitations of cancelled claim 3 have been incorporated into amended claim 1. Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al., Smethers et al., and Honzawa et al.

Regarding original claim 1, the Examiner stated that “it would have been *prima facie* obvious to one of ordinary skill at the time of the invention to use the opaque vessel of Berthold et al. and the chemiluminescent label of Smethers et al. with the vessel of Uzan et al.” Applicants disagree. Regarding original claim 3, the limitations of which have been incorporated into amended claim 1, the Examiner stated that “it would have been *prima facie* obvious to one of ordinary skill at the time of the invention to use the shutter mechanism and light-proof shoe of Honzawa et al. with the modified vessel of Uzan et al. Again, Applicants disagree.

The Examiner has failed to establish a *prima facie* case of obviousness with respect to amended claim 1. To establish a *prima facie* case of obviousness, three criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art references must teach or suggest all the claim limitations. *See MPEP*, §2142.

Regarding the first criteria for establishing a *prima facie* case of obviousness, there is no suggestion or motivation to combine the four references, namely Uzan et al., Berthold et al., Smethers et al., and Honzawa et al., in order to arrive at the invention as claimed in amended claim 1. Rather, the Examiner has impermissibly used these four references in a manner that reconstructs the invention as claimed in amended claim 1 only with the benefit of hindsight. Uzan et al. teaches reaction modules 40 that are formed as single pieces by molding transparent plastics material. *See Uzan et al.*, col. 3, line 26-27. Berthold et al. teaches a specimen rack including a block 10 composed of radiopaque material and cuvettes

20 composed of transparent material. *See Berthold et al.*, col. 4, lines 21-25; col. 5, lines 26-29. The radiopaque block 10 of Berthold et al. is merely designed for receiving transparent cuvettes 20, i.e. the transparent cuvettes 20 are the reaction vessels, not the radiopaque block 10. Thus, there is no suggestion or motivation to combine the transparent reaction modules 40 of Uzan et al. with the radiopaque block 10 of Berthold et al. to arrive at a reaction vessel “wherein the walls are proof against any light emitted by the chemiluminescent substance,” as required by claim 1.

The Examiner has also impermissibly combined a third reference, namely Smethers et al., to arrive at the invention as claimed in claim 1. Smethers et al. teaches a luminometer for detecting chemiluminescence. *See Smethers et al.*, col. 1, lines 24-27. The luminometer includes an array of opaque sample wells 72 and a photodetector assembly 23. *See Smethers et al.*, abstract; col. 4, lines 37-39; and col. 6, lines 23-27. Since neither Uzan et al. nor Berthold et al. teach the use of a chemiluminescent substance, the Examiner used hindsight reconstruction to combine Uzan et al. and Berthold et al. with Smethers et al. to arrive at a reaction vessel for receiving “a substrate coupled with a chemiluminescent substance” and “wherein the walls are proof against light emitted by the chemiluminescent substance,” as required by claim 1. However, there is no suggestion or motivation to combine the luminometer for detecting chemiluminescence of Smethers et al. with the transparent reaction modules of Uzan et al. and the radiopaque block of Berthold et al.

Moreover, the Examiner has impermissibly combined a fourth reference, namely Honzawa et al., with Uzan et al., Berthold et al., and Smethers et al. to reject claim 3, the limitations of which have been incorporated into amended claim 1. Honzawa et al. teaches an apparatus for measuring the chemiluminescence of a single sample contained in a transparent micro-sample tube 21. *See Honzawa et al.*, col. 1, lines 60-61; col. 2, lines 1-4. The apparatus includes a photo-sensing unit 40 in communication with the single, transparent micro-sample tube 21 through a rotational shutter mechanism, which includes a non-transparent rotating cylindrical member 370 and a non-transparent hollow chamber 33. *See Honzawa et al.*, col. 2, lines 5-6; col. 2, lines 18-31. There is no suggestion that the apparatus for measuring a single sample as taught by Honzawa et al. could be configured in a manner that would allow the measurement of the multiple-sample vessels of Uzan et al. Rather, the Examiner impermissibly combined the single-sample apparatus of Honzawa et al. with the multiple-sample vessels of Uzan et al.

In summary, the Examiner has impermissibly used the benefits of hindsight to pick and choose elements from four references in order to arrive at the invention as claimed in

amended claim 1 without any suggestion or incentive to combine the teachings from the references.

Regarding the second criteria for establishing a *prima facie* case of obviousness, there is not a reasonable expectation of success in combining the teachings of Uzan et al., Berthold et al., Smethers et al., and Honzawa et al. in order to arrive at the invention as claimed in amended claim 1. First, there is not a reasonable expectation of success in combining the reaction modules of Uzan et al. with the radiopaque block of Berthold et al., because the radiopaque block of Berthold et al. is a specimen rack for holding cuvettes, not a reaction vessel. Second, there is not a reasonable expectation of success in combining the reaction modules of Uzan et al. with the shutter mechanism of Honzawa et al., because the rotational shutter mechanism taught by Honzawa et al. could not be modified to provide a light-proof shoe to be pressed against the substantially planar rim of the reaction modules taught by Uzan et al. The Examiner has shown no indication of how the rotational shutter mechanism of Honzawa et al. could be successfully combined with the reaction modules of Uzan et al. Even if the rotational shutter mechanism of Honzawa et al. could somehow be combined with the reaction modules of Uzan et al., a separate rotational shutter mechanism would be necessary for each of the eight reaction wells. Thus, there is not a reasonable expectation of success in combining the teachings of Uzan et al., Berthold et al., Smethers et al., and Honzawa et al. in order to arrive at the invention as claimed in amended claim 1.

Regarding the third criteria for establishing a *prima facie* case of obviousness, the four references relied on by the Examiner do not teach all of the claim limitations. Amended claim 1 recites a reaction vessel having a window "wherein the window is surrounded by a substantially plane zone against which a light-proof shoe is pressed." Uzan et al. and Berthold et al. do not teach "a substantially plane zone against which a light-proof shoe is pressed," as required by amended claim 1.

Smethers et al. does not cure the deficiencies of Uzan et al. and Berthold et al. Smethers et al. teaches sample wells 72 having upper edges 74 covered by a film 78. See *Smethers et al.*, col. 6, lines 23-27; col. 6, lines 30-33. As shown in Figure 5A, a photomultiplier tube 73 includes a disc 64 which is pressed against the upper edge 74 of the well 72 to isolate the photomultiplier tube 73 from light emitted by adjacent wells 75. See *Smethers et al.*, Figure 5A; col. 6, lines 49-53. However, a light path is available between adjacent wells 75 and the photomultiplier tube 73 through the film 78. See *Smethers et al.*, col. 6, lines 59-61. Thus, Smethers et al. does not teach "a substantially plane zone against which a light-proof shoe is pressed," as required by amended claim 1.

Honzawa et al. does not cure the deficiencies of Uzan et al., Berthold et al., and Smethers et al. The Examiner stated that Honzawa et al. teaches a shutter mechanism including a dark box, which can be interpreted as a light-proof shoe. Applicants disagree. The transparent micro-sample tube 21 is housed in a non-transparent rotating cylindrical member 370 which includes an opening 37. *See Honzawa et al.*, col. 2, lines 7-13. The transparent micro-sample tube 21 and the rotating cylindrical member 370 are both housed in a non-transparent hollow chamber 33 which includes an opening 38. *See Honzawa et al.*, col. 1, lines 59-61; col. 2, lines 1-6. An optical path between the micro-sample tube 21 and a photo-sensing unit 40 is opened when the opening 37 of the rotating cylindrical member 370 coincides with the opening 38 of the hollow chamber 33 upon rotation of the rotating cylindrical member 370. *See Honzawa et al.*, col. 2, lines 22-31. Thus, the rotational shutter mechanism of Honzawa et al. does not teach “a substantially plane zone against which a light-proof shoe is pressed,” as required by amended claim 1.

Accordingly, Uzan et al., Berthold et al., Smethers et al., and Honzawa et al., alone or in combination, do not teach a reaction vessel having a window “wherein the window is surrounded by a substantially plane zone against which a light-proof shoe is pressed,” as required by amended claim 1.

In summary, the Examiner has not met the three criteria for establishing a *prima facie* case of obviousness with regard to amended claim 1. Therefore, independent claim 1 and dependent claim 4 are allowable.

Independent Claim 5

Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al., Smethers et al., and Honzawa et al. Claim 5 has been amended into independent form and incorporates the limitations of original claims 1-3. Thus, amended claim 5 is allowable for the reasons discussed above with regard to amended claim 1.

Briefly, the Examiner has failed to establish a *prima facie* case of obviousness with respect to amended claim 5. First, there is no suggestion or motivation to combine the four references relied on by the Examiner in order to arrive at the invention as claimed in amended claim 5. Second, there is not a reasonable expectation of success in combining the teachings of the four references in order to arrive at the invention as claimed in amended claim 5. Third, the four references do not teach all of the claim limitations of amended claim 5. Specifically, none of the references teach or suggest “a substantially plane zone against which a light-proof shoe is pressed,” as required by amended claim 5.

In summary, the Examiner has failed to establish a *prima facie* case of obviousness with regard to amended claim 5. Therefore, independent claim 5 and dependent claims 6-11 are allowable.

Dependent Claim 6

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al., Smethers et al., and Honzawa et al. Claim 6 depends from claim 5 and is therefore allowable for the reasons set forth above with respect to claim 5. Additionally, claim 6 specifies an automatic apparatus for immunological assay including “an opaque shoe for pressing in light-proof manner around a read window of a reaction vessel provided with a central opening for passing light between the vessel and photometric means.”

Uzan et al. and Berthold et al. do not teach an opaque shoe for pressing in a light-proof manner around a read window. Smethers et al. does not cure the deficiencies of Uzan et al. and Berthold et al. As shown in Figure 5A, Smethers et al. teaches a photomultiplier tube 73 including a disc 64 which is pressed against the upper edge 74 of a well 72 to isolate the photomultiplier tube 73 from light emitted by adjacent wells 75. *See Smethers et al.*, Figure 5A; col. 6, lines 49-53. However, the well 72 is covered with a film 78, and a light path is available between adjacent wells 75 and the photomultiplier tube 73 through the film 78. *See Smethers et al.*, col. 6, lines 59-61. Honzawa et al. does not cure the deficiencies of Uzan et al., Berthold et al., and Smethers et al. Honzawa et al. teaches a micro-sample tube 21 housed within a rotating cylindrical member 370 having an opening 37 and a hollow chamber 33 having an opening 38. *See Honzawa et al.*, col. 2, lines 1-13. An optical path between the micro-sample tube 21 and a photo-sensing unit 40 is opened when the opening 37 of the rotating cylindrical member 370 coincides with the opening 38 of the hollow chamber 33 upon rotation of the rotating cylindrical member 370. *See Honzawa et al.*, col. 2, lines 22-31. Thus, Honzawa et al. teaches a rotational shutter mechanism, not an opaque shoe for pressing in a light-proof manner around a read window.

Accordingly, Uzan et al., Berthold et al., Smethers et al., and Honzawa et al., either alone or in combination, do not teach or suggest the subject matter defined by claim 6. Therefore, claim 6 specifies additional patentable subject matter.

Dependent Claim 9

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al., Smethers et al., and Honzawa et al. Claim 9 depends from claim 5 and is therefore allowable for the reasons set forth above with respect to claim 5. Additionally, claim 9 specifies an automatic apparatus for immunological assay “including a shutter for optically isolating a photoelectric detector and means for measuring the electrical values delivered by the photoelectric detector while it is immersed in the dark, the shutter being closed.”

Uzan et al. and Berthold et al. do not teach a shutter for optically isolating a photoelectric detector. Smethers et al. does not cure the deficiencies of Uzan et al. and Berthold et al. Smethers et al. teaches a luminometer having a photodetection head 28 and an internal-calibration unit 104. *See Smethers et al.*, col. 8, lines 1-3; col. 8, lines 41-41. The internal calibration unit 104 includes an opaque housing 106, a cavity 108, and a light-emitting diode (LED) 114 press-fitted into the wall of the cavity 108. *See Smethers et al.*, col. 8, lines 41-46. To calibrate the photodetection head 28 of the luminometer, the photodetection head 28 is aligned with cavity 108 and the electrical response of the photodetection head 28 to the intensity of the light emitted by the LED 114 is monitored. *See Smethers et al.*, col. 9, lines 4-9. Thus, Smethers et al. teaches measuring the electrical response of the photodetection head 28 while the cavity 108 is illuminated by the LED 114, not while the cavity 108 and the photodetection head 28 are immersed in the dark. Honzawa et al. does not cure the deficiencies of Uzan et al., Berthold et al., and Smethers et al. Honzawa et al. teaches a rotational cylindrical hollow chamber 370 having an opening 37 and a cylindrical hollow chamber 33 having an opening 38. *See Honzawa et al.*, col. 7, lines 34-38. When the openings 37 and 38 coincide with each other, a photo-sensing unit 40 starts detection. *See Honzawa et al.*, col. 8, lines 44-46. If the openings 37 and 38 do not coincide with each other, the shutter is closed and the photo-sensing unit 40 does not detect light. *See Honzawa et al.*, col. 8, lines 46-48.

Accordingly, Uzan et al., Berthold et al., Smethers et al., and Honzawa et al., either alone or in combination, do not teach or suggest the subject matter defined by claim 9. Therefore, claim 9 specifies additional patentable subject matter.

Dependent Claim 11

Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al., Smethers et al., and Honzawa et al. Claim 11 depends from

claim 5 and is therefore allowable for the reasons set forth above with respect to claim 5. Additionally, claim 11 specifies an automatic apparatus for immunological assay “including a light source for illuminating, on command, the outside of a dark chamber formed temporarily by the walls of the vessel and a photometric means so as to enable the dark chamber to be tested for light-tightness, the immunological test being rejected if the photometric means detect light emitted by the light source.”

Uzan et al., Berthold et al., and Honzawa et al. do not teach or suggest a light source for illuminating the outside of a dark chamber. Smethers et al. does not cure the deficiencies of Uzan et al., Berthold et al., and Honzawa et al. Smethers et al. teaches an internal calibration unit 104 including a light-emitting diode (LED) 114 that is press-fitted into a wall of a housing 106 to illuminate a cavity 108. See *Smethers et al.*, Figure 8A; col. 8, lines 40-46. Thus, the LED 114 illuminates the inside of the cavity 108, rather than the outside of a dark chamber.

Accordingly, Uzan et al., Berthold et al., Smethers et al., and Honzawa et al., either alone or in combination, do not teach or suggest the subject matter defined by claim 11. Therefore, claim 11 specifies additional patentable subject matter.

Independent Claim 13

Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al. and Smethers et al. Claim 13 has been amended into independent form and incorporates the limitations of original claims 1-3. Thus, amended claim 13 is allowable for the reasons discussed above with regard to amended claim 1.

Briefly, the Examiner has failed to establish a *prima facie* case of obviousness with respect to amended claim 13. First, there is no suggestion or motivation to combine the four references relied on by the Examiner in order to arrive at the invention as claimed in amended claim 13. Second, there is not a reasonable expectation of success in combining the teachings of the four references in order to arrive at the invention as claimed in amended claim 13. Third, the four references do not teach all of the claim limitations of amended claim 13. Specifically, none of the references teach or suggest “a substantially plane zone against which a light-proof shoe is pressed,” as required by amended claim 13.

In summary, the Examiner has failed to establish a *prima facie* case of obviousness with regard to amended claim 13. Therefore, independent claim 13 and dependent claims 12 and 14 are allowable.

Dependent Claim 14

Claim 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Uzan et al., in view of Berthold et al. and Smethers et al. Claim 14 depends from claim 13 and is therefore allowable for the reasons set forth above with respect to claim 13. Additionally, claim 14 specifies an automatic method of performing immunological assay “wherein a temporary dark chamber is formed with a reaction vessel having an opaque wall and with photometric means.”

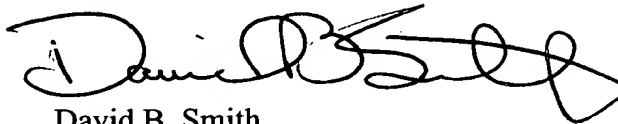
Uzan et al. and Berthold et al. do not teach forming a temporary dark chamber with a reaction vessel having an opaque wall and with photometric means. Smethers et al. does not cure the deficiencies of Uzan et al. and Berthold et al. As shown in Figure 5A, Smethers et al. teaches pressing a photomultiplier tube 73 including a disc 64 against the upper edge 74 of a well 72 covered by a film 78 to isolate the photomultiplier tube 73 from light emitted by adjacent wells 75. *See Smethers et al.*, Figure 5A; col. 6, lines 49-53. However, a temporary dark chamber is not formed, because a light path is available between adjacent wells 75 and the photomultiplier tube 73 through the film 78. *See Smethers et al.*, col. 6, lines 59-61. Honzawa et al. does not cure the deficiencies of Uzan et al., Berthold et al., and Smethers et al. Honzawa et al. teaches a transparent micro-sample tube 21 housed within a non-transparent rotating cylindrical member 370 having an opening 37 and a non-transparent hollow chamber 33 having an opening 38. *See Honzawa et al.*, col. 2, lines 1-13. An optical path between the micro-sample tube 21 and a photo-sensing unit 40 is opened when the opening 37 of the rotating cylindrical member 370 coincides with the opening 38 of the hollow chamber 33 upon rotation of the rotating cylindrical member 370. *See Honzawa et al.*, col. 2, lines 22-31. Thus, Honzawa et al. teaches forming a dark chamber with the rotating cylindrical member 370 and the hollow chamber 33, but Honzawa et al. does not teach forming a dark chamber with a reaction vessel having an opaque wall and with photometric means.

Accordingly, Uzan et al., Berthold et al., Smethers et al., and Honzawa et al., either alone or in combination, do not teach or suggest the subject matter defined by claim 14. Therefore, claim 14 specifies additional patentable subject matter.

CONCLUSION

In view of the above, entry of the amendment and allowance of claims 1 and 4-15 are respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David B. Smith", with a large, stylized flourish at the end.

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Appendix – Marked Up Rewritten Claims

1[/. (Amended) A reaction vessel for automatic apparatus for immunological assay, the vessel comprising walls in the form of a vessel for receiving a sample to be tested, a test reagent, and a substrate coupled with a chemiluminescent substance, and also a filling opening, wherein the walls are proof against any light emitted by the chemiluminescent substance, apart from a window for reading the intensity of any light emitted by the reaction mixture formed by the sample to be tested, the reagent, and the substrate, and wherein the window corresponds to the filling opening of the vessel and wherein the window is surrounded by a substantially plane zone against which a light-proof shoe is pressed.

4[/. (Amended) A one-piece set of multiple reaction vessels, the set comprising a plurality of vessels according to claim 1.

5[/. (Amended) Automatic apparatus for immunological assay, the apparatus comprising means for supporting, guiding, and stepwise displacement of [the] vessels [according to claim 1], or of sets of reaction vessels [according to claim 4] along a path having a predetermined number of positions, means for supporting samples to be analyzed, means for supporting reagents, and means for taking determined quantities of samples and of reagents and for injecting the quantities taken into the reaction vessels, together with means for washing the vessels, means for reading the results, and means for feeding sets of reaction vessels and for ejecting sets of used vessels, the apparatus including means for forming a temporary dark chamber that is proof against external light, said dark chamber having photometric means for measuring the intensity of light and a vessel [according to claim 1 or a vessel of a set of vessels according to claim 4] including walls in the form of a vessel for receiving a sample to be tested, a test reagent, and a substrate coupled with a chemiluminescent substance, and also a filling opening, wherein the walls are proof against any light emitted by the chemiluminescent substance, apart from a window for reading the intensity of any light emitted by the reaction mixture formed by the sample to be tested, the reagent, and the substrate, and wherein the window corresponds to the filling opening of the vessel and wherein the window is surrounded by a substantially plane zone against which a light-proof shoe is pressed.

6[7]. (Amended) Apparatus according to claim 5, including an opaque shoe for pressing in light-proof manner around a read window of a reaction vessel provided with a central opening for passing light between the vessel and photometric means.

7[7]. (Amended) Apparatus according to claim 5, including a plate for receiving the washing means and the photometric means.

8[7]. (Amended) Apparatus according to claim 6, wherein the photometric means include moving equipment for pressing the shoe against the read window of the reaction vessel.

9[7]. (Amended) Apparatus according to claim 5, including a shutter for optically isolating a photoelectric detector[, in particular a photomultiplier,] and means for measuring the electrical values delivered by the photoelectric detector while it is immersed in the dark, the shutter being closed.

10[7]. (Amended) Apparatus according to claim [7] 9, wherein movement of [the] moving equipment serves to close or open the shutter.

11[7]. (Amended) Apparatus according to claim [1] 5, including a light source for illuminating, on command, the outside of [the] a dark chamber formed temporarily by the walls of the vessel and [the] a photometric means so as to enable the dark chamber to be tested for light-tightness, the immunological test being rejected if the photometric means detect light emitted by the light[-tightness testing] source.

12[7]. (Amended) [Apparatus] A method according to claim [11] 14, and further comprising performing a light-tightness test for each reaction vessel subjected to an immunological test.

13[7]. (Amended) An automatic method of performing immunological assay, the method comprising a step of detecting the light, if any, emitted by a substrate coupled with a luminescent chemical substance in the presence of a reagent and a sample to be tested, the method including a step of measuring the light intensity present inside a reaction vessel, the reaction vessel including walls in the form of a vessel for receiving a sample to be tested, a

test reagent, and a substrate coupled with a chemiluminescent substance, and also a filling opening, wherein the walls are proof against any light emitted by the chemiluminescent substance, apart from a window for reading the intensity of any light emitted by the reaction mixture formed by the sample to be tested, the reagent, and the substrate, and wherein the window corresponds to the filling opening of the vessel and wherein the window is surrounded by a substantially plane zone against which a light-proof shoe is pressed.

14[/. (Amended) A method according to claim 13, wherein a temporary dark chamber is formed with [a] the reaction vessel having an opaque wall and with photometric means.